National Institute of Environmental Health Sciences

Climate change and the effects of dengue upon Australia: An analysis of health impacts and costs

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Abstract:

Projected regional warming and climate change analysis and health impact studies suggest that Australia is potentially vulnerable to increased occurrence of vector borne diseases such as dengue fever. Expansion of the dengue fever host, Aedes aegypti could potentially pose a significant public health risk. To manage such health risks, there is a growing need to focus on adaptive risk management strategies. In this paper, we combine analyses from climate, biophysical and economic models with a high resolution population model for disease spread, the EpiCast model to analyse the health impacts and costs of spread of dengue fever. We demonstrate the applicability of EpiCast as a decision support tool to evaluate mitigation strategies to manage the public health risks associated with shifts in the distribution of dengue fever in Australia.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Other Climate Scenario

Other Climate Scenario: SRES A1B; author defined scenarios

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Dengue

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Cost/Economic, Methodology, Outcome Change Prediction

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Short-Term (

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content